Abstract ID : 808

Title : Spatial and temporal influences on humpback whale (Megaptera novaeangliae) habitat utilization on the winter grounds off Maui, Hawaii.

Category : Behavior

Student :

Preferred Format : Either Oral or Poster Presentation

Abstract : Effective management plans must account for the effect of temporal and spatial factors on whale distribution and behavior. I investigated the relationship of location on calf distribution and on activity patterns of humpback whales on the winter grounds off Maui, Hawaii. The effect of various permutations of temporal variables (time of day and time of season) on these relationships was also examined. Data collected included location, date, time, and behavior from 2664 groups during the period 1996 through 2003. Chi-square and selected post-hoc comparisons of observed frequencies were used to analyze the data. While time of day (categories: morning, mid-day, evening) and time of season (categories: early, peak, late) had no impact on activity, calf sightings were significantly related to time of season with calf sightings significantly below expected frequencies for early season morning and mid-day sightings (likely a consequence of fewer calves having been born at this stage of the season). On the other hand, the likelihood of encountering calves was significantly related to location (categories: Lanai coastal, Maui coastal, Molokai coastal, and open channel). This relationship was particularly evident along the Maui, and to a slightly lesser extent, Lanai Coasts. Time of day and time of season were important influences on these Maui and Lanai sightings, but only for early season morning and mid-day sightings. Activity (categories: competitive, milling/resting, traveling, and other) was significantly affected by location for morning sightings, with the Maui coast having significantly fewer competitive and more milling/resting groups. There were no significant variations between activity and location associated with time of season. These findings clearly identify the importance of near shore locations for mothers with calves during the early season. Consistent with this is the finding that for morning sightings milling/resting behavior was particularly evident in these same locations while competitive behavior was down.